EXHIBIT A

Entropic Communications, LLC v. DirecTV, LLC, et al.

Case No. 2:23-cv-01043-JWH-KES

Member Case: 2:23-cv-05253-JWH-KES

DirecTV's Motion to Dismiss

January 16, 2024

Step One – Three Key Principles

1. Patentability turns on whether claims improve computers or else use computers as mere tools

2. Claims must be read in light of the specification

3. Claim need not teach how each step is performed or why it is an improvement over the art

Step One Turns On Whether Claim Recites Improvement To Technology vs. Tech As Tool

"In cases involving software innovations, this inquiry often **<u>turns on whether the claims focus on 'the specific asserted improvement in computer capabilities</u>** ... or, instead, on a process that qualifies as an abstract idea for which computers are invoked merely as a tool.' "

Koninklijke KPN N.V. v. Gemalto M2M GmbH, 942 F.3d 1143, 1149 (Fed. Cir. 2019) (citations omitted).

Step One Must Consider What The Patent Asserts To Be The Advance Over The Prior Art

"The Step 1 'directed to' analysis called for by our cases depends on an accurate characterization of what the claims require **<u>and of what the patent asserts to be the claimed advance</u>**."

TecSec, Inc. v. Adobe Inc., 978 F.3d 1278, 1294 (Fed. Cir. 2020) (emphasis added)

Step One Turns On Whether Claim Recites Improvement To Technology Vs. Tech As Tool

Patent-Eligible Improvements to Computers or Networks	Abstract Ideas Invoking Technology as Mere Tool
Packet Intelligence	*Electric Power Group*
Mentone Solutions	*Chamberlain Group*
Uniloc v. LG	*Trinity Info Media*
SRI Int'l (cited in *Packet Intel.*)	*Two-Way Media*
Koninklijke KPN	

Step One Does Not Turn On Whether Claim Recites "Transmitting," "Analyzing," Or "Receiving" Data

Patent-Eligible Improvements to Computers or Networks	Abstract Ideas Invoking Technology as Mere Tool
Packet Intelligence	*Electric Power Group*
Mentone Solutions	*Chamberlain Group*
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SRI Int'l (cited in *Packet Intel.*)	*Two-Way Media*
Koninklijke KPN	

Claims recite transmitting/analyzing/receiving data

Step One Must Read Claim As Whole In Light Of Specification

[W]e review the asserted claims, <u>considered in light of the specification</u>."

Realtime Data LLC v. Array Networks Inc., No. 2021-2251, 2023 WL 4924814, at *7 (Fed. Cir. Aug. 2, 2023)

"In [this] eligibility analysis, we consider the claim as a whole . . . and <u>read it in light of the specification</u>."

Packet Intel. LLC v. NetScout Sys., Inc., 965 F.3d 1299, 1309 (Fed. Cir. 2020)

Packet Intel.: Spec Can Show How Claim Is Patentable and How Elements Refer To Specific Technological Features

The specifications likewise explain how the elements recited in the claims refer to specific technological features functioning together to provide that granular, nuanced, and useful classification of network traffic, rather than an abstract result.

Packet Intel. LLC v. NetScout Sys., Inc., 965 F.3d 1299, 1310 (Fed. Cir. 2020)

Kollective: Spec and Complaint Can Explain How Invention Works and Why It Improves On The Art

"Claim 1 recites a specific network structure, the patent's written description explains how it is arranged, and the written description and amended complaint explain the alleged benefits of sharing content using a P2P network outside the control of a CDN using peer nodes."

Coop. Entm't, Inc. v. Kollective Tech., Inc., 965 F.3d 1299, 1310 (Fed. Cir. 2020)

Mentone: Claim Recited Patentable Improvement Even Though Details Were Not In The Claim Itself

5. A multiple access communication method in a mobile station, comprising the steps of:

receiving an assignment of at least a first PDCH (packet data channel) and a second PDCH;

monitoring an assigned PDCH to detect a USF; and

transmitting on an assigned PDCH corresponding to the USF,

wherein (i) if shifted USF operation is not used then a first assigned PDCH is monitored to detect a USF corresponding to the first assigned PDCH and (ii) if the shifted USF operation is used then a second assigned PDCH is monitored to detect the USF corresponding to the first assigned PDCH and a USF corresponding to the second assigned PDCH.

- Directed to "breaking the fixed relationship between the timing of a downlink USF and subsequent uplink transmission" (*4)
- None of the red words found in claim. Fed Cir read claim in view of specification to define the invention
- Patentable even though claim alone does not specify:
  - HOW to receive an assignment
  - HOW to detect a USF
  - HOW to transmit on an assigned PDCH

Mentone Sols. LLC v. Digi Int'l Inc., No. 2021-1202, 2021 WL 5291802, at *2 (Fed. Cir. Nov. 15, 2021)

Uniloc: Claim Recited Patentable Improvement Even Though Details Were Not In The Claim Itself

2. A primary station for use in a communications system comprising at least one secondary station, wherein means are provided

for broadcasting a series of inquiry messages, each in the form of a plurality of predetermined data fields arranged according to a first communications protocol, and

for ***adding*** to each inquiry message prior to transmission an ***additional data field*** for polling at least one secondary station.

Uniloc USA, Inc. v. LG Elecs. USA, Inc., 957 F.3d 1303, 1305-6 (Fed. Cir. 2020)

- Directed to "reduction of latency experienced by parked secondary stations in communication systems."
- None of the red words found in claim. Fed Cir read claim in view of specification to define the invention
- "Claims need not articulate the advantages of the claimed combinations to be eligible." (1309)
- Patentable even though claim alone does not specify:
    - HOW to broadcast a series of inquiry messages
    - HOW to add the data field

KPN: Claim Recited Patentable Improvement Even Though Details Were Not In The Claim Itself

1. A device for producing error checking based on original data provided in blocks with each block having plural bits in a particular ordered sequence, comprising:

a generating device configured to ***generate check data***; and

a varying device configured to ***vary original data*** prior to supplying said original data to the generating device as varied data;

wherein said varying device includes ***a permutating device configured to perform a permutation of bit position*** relative to said particular ordered sequence for at least some of the bits in each of said blocks making up said original data without reordering any blocks of original data.

942 F.3d 1143, 1147-48 (Fed. Cir. 2019)

- Directed to "a new way of generating check data that enables the detection of persistent systematic errors in data transmissions that prior art systems were previously not equipped to detect." (at 1151)
- Patentable because claim "enabled" error detection even if it did not recite actual detection step.
- Patentable even though claim alone does not specify:
  - HOW to generate check data
  - HOW to perform a permutation of bit position
  - HOW the invention improved on the prior art

TecSec: Claim Recited Patentable Improvement Even Though Details Were Not In The Claim Itself

1. A method for providing ***multi-level multimedia security*** in a data network, comprising the steps of:

A) ***accessing*** an object-oriented key manager;

B) selecting an object to encrypt;

C) ***selecting a label*** for the object;

D) selecting an encryption algorithm;

E) encrypting the object according to the encryption algorithm;

F) ***labelling*** the encrypted object;

G) reading the object label;

H) ***determining access authorization based on the object label***; and

I) decrypting the object if access authorization is granted.

- "[I]mproving [] a data network used for broadcasting a file to a large audience, with the improvement assertedly being an efficient way for the sender to permit different parts of the audience to see different parts of the file." (1296)
- "Multi-level" only in preamble, Fed Cir relied on it
- Patentable even though claim does not specify:
  - HOW to access the key manager
  - HOW to select a label
  - HOW to determine access based on the label

TecSec, Inc. v. Adobe Inc., 978 F.3d 1278, 1296 (Fed. Cir. 2020)

SRI Int'l: Claims Recited Patentable Improvement Despite Not Including All Details In Claim

A computer-automated method of hierarchical event monitoring and analysis within an enterprise network comprising:

deploying a plurality of network monitors in the enterprise network;

detecting, by the network monitors, ***suspicious network activity based on analysis of network traffic data*** selected from one or more of the following categories: {network packet data transfer commands, network packet data transfer errors, network packet data volume, network connection requests, network connection denials, error codes included in a network packet, network connection acknowledgements, and network packets indicative of well-known network-service protocols};

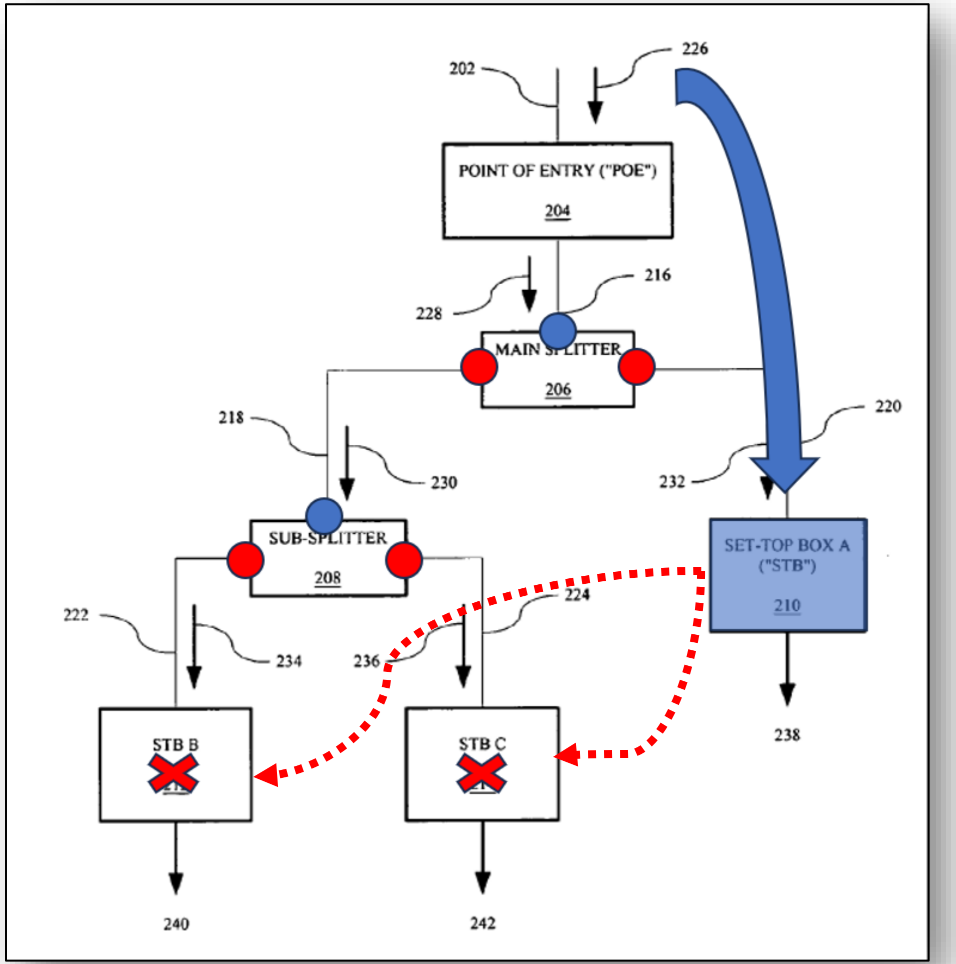
generating, by the monitors, ***reports of said suspicious activity***; and

automatically ***receiving and integrating the reports*** of suspicious activity, by one or more hierarchical monitors.

930 F.3d 1295, 1301 (Fed. Cir. 2019) (cited in *Packet Intel.*, 965 F.3d at 1309)

- Rejected analogy to *Elec. Power* because claims solve a networking problem (1304)
- Recited specific technique for improving computer network security (1304)
- Patentable even though claim does not specify:
  - HOW to deploy network monitors
  - HOW to detect suspicious activity
  - HOW to generate or receive reports

Technical Problems In Prior Art Coaxial Networks

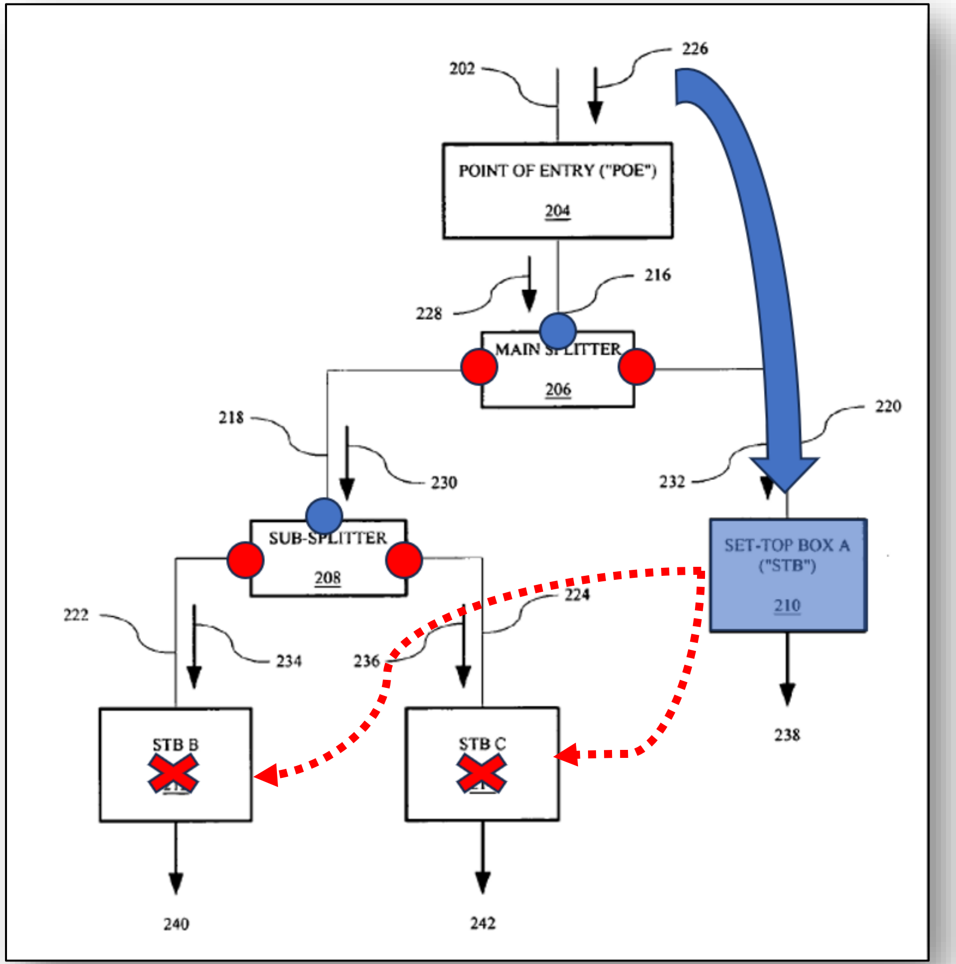


FAC, ¶ 27 (annotated)

A reflected signal and an attenuated signal passing through a splitter port creates a multipath environment. The received power level of the direct signal relative to the reflected signals can vary between equal levels to one signal being substantially greater than the other. The multipath environment impairs the ability to achieve high data rates in a communication network. The signal reflections and tap port isolation of splitters existing in a typical cable TV wiring configuration presents a problem to shared usage of the cable for a LAN system. The prior art references address communicating between a cable head end and in-home units but do not address the impairments present in the home wiring that restricts high bandwidth communication between devices within the home.

'518 Pat. 4:19-32

Technical Problems In Prior Art Coaxial Networks



FAC, ¶ 27 (annotated)

State of Coaxial Networking in the Prior Art

- Splitters isolate devices from one another (FAC ¶ 22, 66)
- Splitters weaken signaling between devices (¶ 22-24)
- Channel characteristics unknown and variable (¶ 23, 29, 31)
- Channel characteristics asymmetrical (¶ 30-31)
- No communication between nodes (¶ 24-25, 37, 45)
- No broadcasting from one node to others (¶ 91, 98)
- No method for locating other devices (¶ 26)

Solving Problems Specific to Coaxial Networks Is The Crux Of The Inventions, Not A "Field Of Use"

Case	Specific Problem	Key Language
Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc., 880 F.3d 1356 (Fed. Cir. 2018)	Managing display on small screen size	"This language clearly indicates that the claims are directed to an improvement in the functioning of computers, **particularly those with small screens**." (1363)
Mentone Sols. LLC v. Digi Int'l Inc., No. 2021-1202, 2021 WL 5291802, (Fed. Cir. Nov. 15, 2021)	Allocating bandwidth for certain mobile stations	"The claimed invention, therefore, improves communication capabilities **in certain mobile stations** using extended bandwidth allocation." (*4)

"[U]seful improvements to computer networks are patentable regardless of whether the network is comprised of standard computing equipment. "

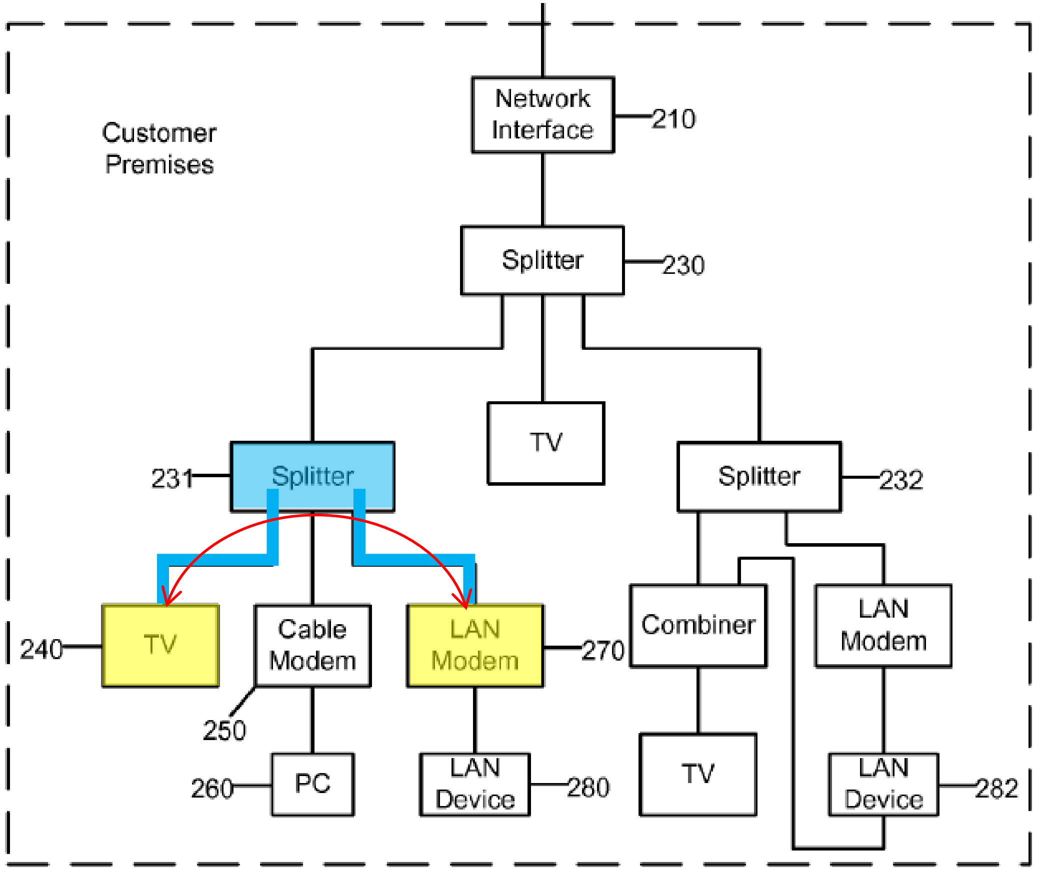
Coop. Ent., Inc. v. Kollective Tech., Inc., 50 F.4th 127, 135 (Fed. Cir. 2022)

’518 Patent Is Patent-eligible Under § 101

- Step one: Enable communication across a splitter in a coaxial network
- Step two: Probing + bit-loading supply inventive concepts
  - Sending probe between nodes and through splitter was not routine
  - Bit-loading based on probing of channel between nodes was not routine
- DTV wrong about what is claimed and how it improves on the art

Step 1: '518 Enables Communication Over Splitters In Coaxial Network Through Probing And Bit Loading

1. A data communication network comprising:
at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and
cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;
whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;
wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.



'518 Pat. Fig. 2 (annotated)

Step 1: Probing + Bit-loading Is "How" '518 Recites Improvement To Coaxial Networks

1. A data communication network comprising:

at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and

cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;

whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;

wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.

Cable wiring: multipath and attenuation impair transmission

"A reflected signal and an attenuated signal **passing through a splitter port creates a multipath environment** . . . . The multipath environment **impairs the ability to achieve high data rates** in a communication network." (Col. 4:19–26.)

Bit loading + probing: solves multipath and attenuation

"**Bit loading** . . . can be used individually or in combination to implement a network that **overcomes the problem of multipath and high attenuation in building cable wiring** that would restrict the ability of terminal devices to communicate with each other." (Col. 4:41–47.)

Step 1: '518 Recites Probing and Communicating Through Splitter

1. A data communication network comprising:

at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and

cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;

whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;

wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.

Recites "cable wiring" with splitter and network devices connected to tap ports of the splitter

Recites communication through "**the** cable wiring"

Recites transmitting probes through "**the** cable wiring"

Step 2: ’518 Improves Coaxial Network Using Specific Probing and Bit-Loading Functions NOT Routine or Conventional in the Art

1. A data communication network comprising:
at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and
cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;
whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;
wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.

State of Coaxial Networking in the Prior Art

- ✓ Splitters isolate devices from one another (FAC ¶ 22, 66)
- ✓ Splitters weaken signaling between devices (¶ 22-24)
- ✓ Channel characteristics unknown and variable (¶ 23, 29, 31)
- ✓ Channel characteristics asymmetrical (¶ 30-31)
- ✓ No communication between nodes (¶ 24-25, 37, 45)
- No broadcasting from one node to others (¶ 91, 98)
- No method for locating other devices (¶ 26)

Step 2: '518 Distinguishable From *Dish* Order

1. A data communication network comprising:
at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and
cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;
whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;
wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.

Specified components: cable wiring with devices connected to splitter tap ports

Specific, unconventional use of probes: transmitting through splitter in a coaxial cable network

Specific, unconventional adaptation: bit-loading using probes to enable communication between nodes

"[T]he 'adaptive transmission parameters' language in Claim 11 does not impart sufficient detail—in terms of either physical components or software structures—to alter the character of the claims."

(DISH Order at 11.)

’539 Patent Is Patent-eligible Under § 101

- Step one:
  - Optimizes packet construction in broadband cable network by measuring and responding to node delay, overcoming problems of multipath environment
- Step two
  - Use of specific probe type (echo profile probe) to measure specific property of coaxial network (node delay spread) was not routine or conventional
  - Optimizing packet construction (cyclic prefix, preamble, “other parameters”) based on echo profile probe was not routine or conventional
- DTV misreads claim and is wrong about the teachings of the patent

Step 1: '539 Improves Modems Used In Coaxial Networks By Overcoming Problems In The Art

1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:
a transmitter; and
a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;
wherein the transmitter communicates the at least one transmit packet.

State of Coaxial Networking in the Prior Art

- ✓ Splitters isolate devices from one another (FAC ¶ 22, 66)
- ✓ Splitters weaken signaling between devices (¶ 22-24)
- ✓ Channel characteristics unknown and variable (¶ 23, 29, 31)
- Channel characteristics asymmetrical (¶ 30-31)
- ✓ No communication between nodes (¶ 24-25, 37, 45)
- No broadcasting from one node to others (¶ 91, 98)
- No method for locating other devices (¶ 26)

Step 1: ’539 Claim Linked To Improvement In Specification

1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:

a transmitter; and

a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;

wherein the transmitter communicates the at least one transmit packet.

In FIG. **3**, a functional diagram **300** showing the logical communications between various nodes of the coaxial home network, Node A **302**, Node B **304**, Node C **306**, and Node D **308**, in the form of a virtual logical mesh network is shown. Even though the coaxial network may utilize the same frequency for communications between the various nodes in the network, the frequency channel response between any pair of nodes and in any direction may be significantly different. Hence, to create the logical network shown in FIG. **3**, there has to be concern about the communications capabilities between each and every node pair. Also, these communica-

[054] The probe packet type may be used for at least three functions in a BCN network 310. The first use for the probe packet is link optimization. An echo profile probe is sent to determine how far apart the BCN modems (i.e. nodes) are in the BCN network 310. The determined distance between nodes is used to calculate the cyclic prefix that is used in messages to accommodate echo and multipath.

‘539 Pat. at 6:48-67; Dkt. 215-4 (Prov. App. 60/632,797, ¶ 54.)

Step 1: ’539 Claim Linked To Improvement In Specification

1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:

a transmitter; and

a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;

wherein the transmitter communicates the at least one transmit packet.

In another example, the EP probe is used to determine the impulse response of the inter-node channel. The result determines the size of the cyclic prefix of the OFDM waveform.

The third major step in packet construction is Channel Estimation (“CE”) construction (see FIGS. **9** and **22**). The Channel Estimate section consists of a variable length (0-256 samples) cyclic prefix, denoted as AcqCP, followed by 0 to 8 OFDM symbols. The AcqCP is a cyclic prefix of the first symbol only and is used if there is at least one OFDM symbol.

	Preamble + Channel Estimate				Payload MPDU				
Packet type	ST	LT	FT	CE	modulation	Sub-Carriers	Cyclic Prefix	Content	FEC
IQ probe	8	8	0	1	16-QAM	2 (specified by receiver of probe)	0	Specified by Packet Profile	NA
EVM Probe	8	8	0	8	BPSK	All except unused per table	64 initially, 4-64 after EPP	PN15	NA
EPP	8	8	0	0	BPSK	None, time domain signal	0	PN15	NA

‘539 Pat. at 10: 30-37, 16:4-24, Fig. 22

Step 2: ’539 Recites Specific Probes and Optimization Operations NOT Routine or Conventional in Prior Art Coaxial Networks

1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:
a transmitter; and
a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;
wherein the transmitter communicates the at least one transmit packet.

- Specified architecture: transmitting node across a coaxial network, which commonly used splitters (Col. 3:51-61; FAC ¶ 19, 22, 24, 29-30)
- Unconventional use of probes: measure node delay spread. (FAC ¶ 19, 22, 29-30, 131-133)
- Unconventional response: optimize packet construction in coaxial network based on measured node delay spread (FAC ¶ 134)

"Other Parameters" Does Not Change Analysis

1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:

a transmitter; and

a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;

wherein the transmitter communicates the at least one transmit packet.

- "Other parameters" is not "any parameters." Must be read in context of claim limitation regarding measured node delay spread and specification.
  - Example: Channel Estimate (Fig. 22, col. 10:4-23)

	Preamble + Channel Estimate				Payload MPI		
Packet type	ST	LT	FT	CE	modulation	Sub-Carriers	Cyclic Prefix
IQ probe	8	8	0	1	16-QAM	2 (specified by receiver of [illegible])	0
EVM Probe	8	8	0	8	BPSK	All except unused per table	64 initially, 4-64 after EPP

- Claim limited to use of "measured node delay spread" to optimize parameters
- At minimum, scope of "other parameters" raises claim construction dispute that cannot be resolved at MTD

’759 Patent Is Patent-eligible Under § 101

- Step one:
  - Enables broadcasting to multiple nodes in a broadband cable network, overcoming barriers to communication in prior art

- Step two:
  - Probing of all nodes in a BCN was not routine or conventional
  - Establishing common bit-loading scheme was not routine or conventional

- DTV misreads claim and is wrong to require claim to recite a “broadcasting” step

Step 1: '759 Recites Specific Solution To Problem Of Unknown And Variable Channels In A BCN

2. A method for determining a common bit-loading modulation scheme for communicating between a plurality of nodes in a broadband cable network ("BCN"), the method comprising:

transmitting a probe signal from a transmitting node within the plurality of nodes to a sub-plurality of receiving nodes within the plurality of nodes;

receiving a plurality of response signals from the sub-plurality of receiving nodes wherein each response signal includes a bit-loading modulation scheme determined by a corresponding receiving node;

determining the common bit-loading modulation scheme from the received plurality of response signals;

receiving the probe signal at one receiving node of the plurality of receiving nodes through a channel path of transmission;

determining the transmission characteristics of the channel path at the one receiving node;

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wherein determining a common bit-loading modulation scheme includes:

comparing a plurality of bit-loading modulation schemes from the corresponding received plurality of response signals; and

determining the common bit-loading modulation scheme in response to comparing the plurality of bit-loaded modulation schemes.

Transmission and analysis of probes for each individual channel solves problem of "unknown" channel characteristics in BCN by determining characteristics of each channel

It is appreciated by those skilled in the art that the different channels typically utilize different bit-loading modulation schemes because the channels are physically and electrically different in the cable network. Physically the channels typically vary in length between nodes and electrically vary because of the paths through and reflections from the various cables, switches, terminals, connections and other electrical components in the cable network. Bit-loading is the process

Determination of common bit-loading scheme solves problem of "variable" channel characteristics by establishing scheme common to all channels

Returning to FIG. 5, the BCN, in order to insure that both node B 504 and node C 506 are able to receive a broadcast signal transmitted from node A 502, utilizes a bit-loading modulation scheme that is known as the common bit-loaded modulation scheme. The common bit-loaded modulation

'759 Pat. 7:5-18; 10:6-14

Step 1: Spec Explains How Claimed Invention Works and Provides Benefit Over Prior Art

Problem in art: BCN impedes networking, broadcasting

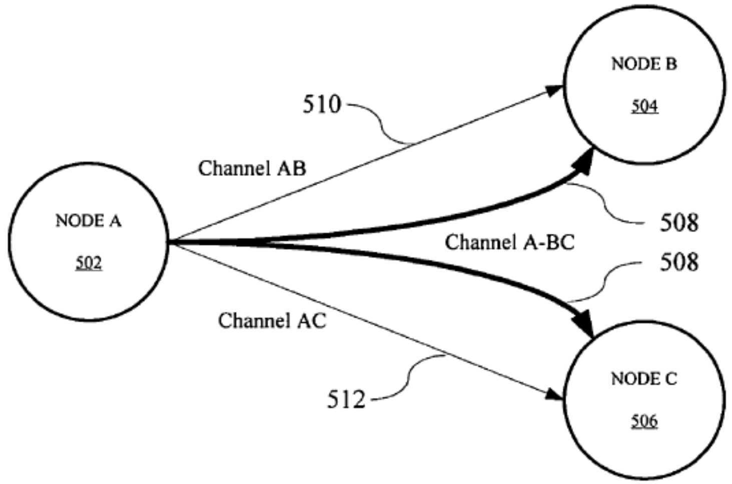
Unfortunately, most broadband cable networks (such as the examples shown in both FIG. 1 and FIG. 2) presently utilized within most existing buildings are not configured to allow for easy networking between CPEs because most broadband cable networks utilize broadband cable splitters that are designed to split an incoming signal from the POE into numerous split signals that are passed to the different nodes in different rooms.

"At the time of the invention of the '759 Patent, it was not known in the art that when transmitting data over a broadband cable network from one node to multiple nodes it is generally more efficient to broadcast data over a common bitloading scheme than to transmit data to each receiving node using a bit-loading scheme specific to each individual communication path."

(FAC ¶ 98)

Claimed solution: establish common bit loading scheme

Returning to FIG. 5, the BCN, in order to insure that both node B **504** and node C **506** are able to receive a broadcast signal transmitted from node A **502**, utilizes a bit-loading modulation scheme that is known as the common bit-loaded modulation scheme. The common bit-loaded modulation scheme transmitted via the A-BC channel, along signal path **508**, is a combination of the bit-loading modulation scheme transmitted via the AB channel, along signal path **510**, and the AC channel, along signal path **512**.



'759 Pat. 10:6-14, Fig. 5

Step 2: Probing Multiple Channels and Determining Common Bit-loading Scheme <u>**Is**</u> "How" Invention Improves On Art

2. A method for determining a common bit-loading modulation scheme for communicating between a plurality of nodes in a broadband cable network ("BCN"), the method comprising:

transmitting a probe signal from a transmitting node within the plurality of nodes to a sub-plurality of receiving nodes within the plurality of nodes;

receiving a plurality of response signals from the sub-plurality of receiving nodes wherein each response signal includes a bit-loading modulation scheme determined by a corresponding receiving node;

determining the common bit-loading modulation scheme from the received plurality of response signals;

receiving the probe signal at one receiving node of the plurality of receiving nodes through a channel path of transmission;

determining the transmission characteristics of the channel path at the one receiving node;

transmitting a response signal from the one receiving node to the tra… acteristic… suring th… received… generating… utilizes a… ated by t… ing the tr…

wherein determining a common bit-loading modulation scheme includes:

comparing a plurality of bit-loading modulation schemes from the corresponding received plurality of response signals; and

determining the common bit-loading modulation scheme in response to comparing the plurality of bit-loaded modulation schemes.

<u>State of Coaxial Networking in the Prior Art</u>

- ✓ Splitters isolate devices from one another (FAC ¶ 22, 66)
- ✓ Splitters weaken signaling between devices (¶ 22-24)
- ✓ Channel characteristics unknown and variable (¶ 23, 29, 31)
- Channel characteristics asymmetrical (¶ 30-31)
- ✓ No communication between nodes (¶ 24-25, 37, 45)
- ✓ No broadcasting from one node to others (¶ 91, 98)
- No method for locating other devices (¶ 26)

Step 1: ’759 Preamble Limiting And Confirms Invention Directed To Enabling Broadcasting Over A BCN

2. A method for determining a common bit-loading modulation scheme for communicating between a plurality of nodes in a broadband cable network (“BCN”), the method comprising:

transmitting a probe signal from a transmitting node within the plurality of nodes to a sub-plurality of receiving nodes within the plurality of nodes;

receiving a plurality of response signals from the sub-plurality of receiving nodes wherein each response signal includes a bit-loading modulation scheme determined by a corresponding receiving node;

determining the common bit-loading modulation scheme from the received plurality of response signals;

Antecedent basis for “common bit-loading modulation scheme” for communicating between nodes in a BCN

Antecedent basis for “plurality of nodes”

Preamble establishes nodes are “in a broadband cable network (‘BCN’)”

“[W]e see no error here in the district court citing to the preamble in its review of whether the claims are directed to an abstract idea.”

Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC, 874 F.3d 1329, 1340 (Fed. Cir. 2017)

Step 1: '759 Not Required To Recite "Apply The Invention"

"Appellees argue that the claims are ineligible because they fail to recite a last application step that uses the generated check data to actually perform error detection . . . . We disagree."

A claim that is directed to improving the functionality of one tool . . . does not necessarily need to recite how that tool is applied in the overall system . . . in order to constitute a technological improvement that is patent-eligible."

KPN, 942 F.3d at 1151.

Step 2: Probing Multiple Channels and Determining Common Bit-loading Scheme Was NOT Routine or Conventional

2. A method for determining a common bit-loading modulation scheme for communicating between a plurality of nodes in a broadband cable network ("BCN"), the method comprising:

transmitting a probe signal from a transmitting node within the plurality of nodes to a sub-plurality of receiving nodes within the plurality of nodes;

receiving a plurality of response signals from the sub-plurality of receiving nodes wherein each response signal includes a bit-loading modulation scheme determined by a corresponding receiving node;

determining the common bit-loading modulation scheme from the received plurality of response signals;

receiving the probe signal at one receiving node of the plurality of receiving nodes through a channel path of transmission;

determining the transmission characteristics of the channel path at the one receiving node;

transmitting a response signal from the one receiving node to the tra

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wherein determining a common bit-loading modulation scheme includes:

comparing a plurality of bit-loading modulation schemes from the corresponding received plurality of response signals; and

determining the common bit-loading modulation scheme in response to comparing the plurality of bit-loaded modulation schemes.

- Specified architecture: communication across multiple nodes in a BCN (FAC ¶ 19, 22, 24, 29-30, 32)
- Unconventional use of probes: measure channel paths from transmitter to multiple receiving nodes in a BCN. (FAC ¶ 19, 22, 29-30,)
- Unconventional scheme: determine common bit-loading scheme to all paths to enable broadcasting (FAC ¶ 97-98)

’802 Patent Is Patent-Eligible Under § 101

- *Alice* Step one: claim 3 is not directed to an abstract idea
  - Specific data fields in a Beacon Packet improve coaxial cable networks by enabling node-to-node communication
- *Alice* Step two: claim 3 includes multiple “inventive concepts”
  - Using robust Beacon Packet to provide essential information enables node-to-node communication in a coaxial cable network
  - Upconverting packets before transmitting them on a broadband cable network allows co-existence with other services

’802 Patent Is Comparable To The Patent Found Eligible By The Federal Circuit In *Uniloc*

	***Uniloc* Patent**	**’802 Patent**
Technical Problem	Latency from alternating between connecting new devices and communicating with existing devices	Existing coaxial cable installations prevented communication between nodes on the cable network
Claimed Technical Solution	Adding “polling” data fields into the existing “inquiry” messages	Adding essential data fields to robust “beacon” packets that are broadcast to all nodes
Improvement to Computer Network	Simultaneous “polling” and “inquiry” reduces latency in a Bluetooth network	Efficient admission process enables communications between nodes in a broadband cable network

Claims Of The ’802 Patent Are Comparable To Those Found Eligible In *Uniloc*

Uniloc Patent Claim

2. A primary station for use in a communications system comprising at least one secondary station, wherein means are provided for broadcasting a series of inquiry messages, each in the form of a plurality of predetermined data fields arranged according to a first communications protocol, and for adding to each inquiry message prior to transmission an additional data field for polling at least one secondary station.

U.S. 6,993,049

’802 Patent Claim

3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:

formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, includ-

. . .

wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.

Uniloc Patent: Directed To Improving A Bluetooth Network And Is Eligible Under § 101

Uniloc Patent Claim

2. A primary station for use in a communications system comprising at least one secondary station, wherein means are provided for broadcasting a series of inquiry messages, each in the form of a plurality of predetermined data fields arranged according to a first communications protocol, and for adding to each inquiry message prior to transmission an additional data field for polling at least one secondary station.

Federal Circuit Decision

"[T]he claims at issue are directed to a **patent-eligible improvement to computer functionality**, namely the reduction of latency experienced by parked secondary stations in communication systems."

"[L]ike the claims in *DDR*, the claimed invention changes the normal operation of the communication system itself to 'overcome a problem specifically arising in the realm of computer networks.'"

Uniloc USA, Inc. v. LG Elecs. USA, Inc., 957 F.3d 1303, 1307–08 (Fed. Cir. 2020).

’802 Patent: Directed To Improving A Broadband Cable Network And Is Eligible Under § 101

’802 Patent Claim

3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:

formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, includ-

. . .

wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.

’802 Patent Specification

In another implementation, each new BCN modem wishing to join the network listens to the network on a selected frequency channel to see whether there is an NC node on the channel. If there is, the new BCN modem receives the Beacon messages from the NC BCN. The Beacon messages are very robust and can be received even in a very poor channel environment. The Beacon also has information about the admis-

’802 Patent at 13:11–17

The beacon packet **1806** may be a packet that is 216 bits in length with an additional 32 bits of CRC data. When a BCN modem is activated, it attempts to locate the network timing by receiving a beacon packet **1806** which identifies network timing and essential network control information including network admission area, and other information identifying the time location and characteristics of other important and valid information such as future beacon locations, future channel assignment information, etc. Any BCN modem that wishes to be admitted to the network then transmits an admission request **1844** in a data/control packet **1804** to the NC using the identified admission area.

’802 Patent at 25:13–241

’802 Patent Claim 3 Provides More Technical Detail Than Claims Found Eligible In *Uniloc*

Uniloc Patent Claim

2. A primary station for use in a communications system comprising at least one secondary station, wherein means are provided for broadcasting a series of inquiry messages, each in the form of a plurality of predetermined data fields arranged according to a first communications protocol, and for adding to each inquiry message prior to transmission an additional data field for polling at least one secondary station.

’802 Patent Claim

3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:

formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, includ-

. . .

wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.

Reasoning Of *Uniloc* Is Confirmed By Subsequent Federal Circuit Cases

"Considered as a whole, and **in view of the specification**, claim 1 is not directed to an abstract idea. Rather, it is directed to a **specific, hardware-based RFID serial number data structure designed to enable technological improvements** to the commissioning process."

Adasa Inc. v. Avery Dennison Corp., 55 F.4th 900, 908 (Fed. Cir. 2022) (finding claim eligible in view of *Uniloc v. LG*).

’802 Patent Is Patent-Eligible Under § 101

- *Alice* Step one: claim 3 is not directed to an abstract idea
  - Specific data fields in a Beacon Packet improve coaxial cable networks by enabling node-to-node communication
- *Alice* Step two: claim 3 includes multiple “inventive concepts”
  - Using robust Beacon Packet to provide essential information enables node-to-node communication in a coaxial cable network
  - Upconverting packets before transmitting them on a broadband cable network allows co-existence with other services

’802 Inventive Concept: Sending “Essential Network Control Information” In “Robust” Beacon Packets

’802 Patent Claim

3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:

formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, includ-

. . .

wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.

108. As described in Paragraphs 11 to 38 above, this broadband cable network environment had unique technological limitations as of the priority date of the ’802 Patent that made locating nodes on the network difficult and impractical. In

FAC, ¶ 108

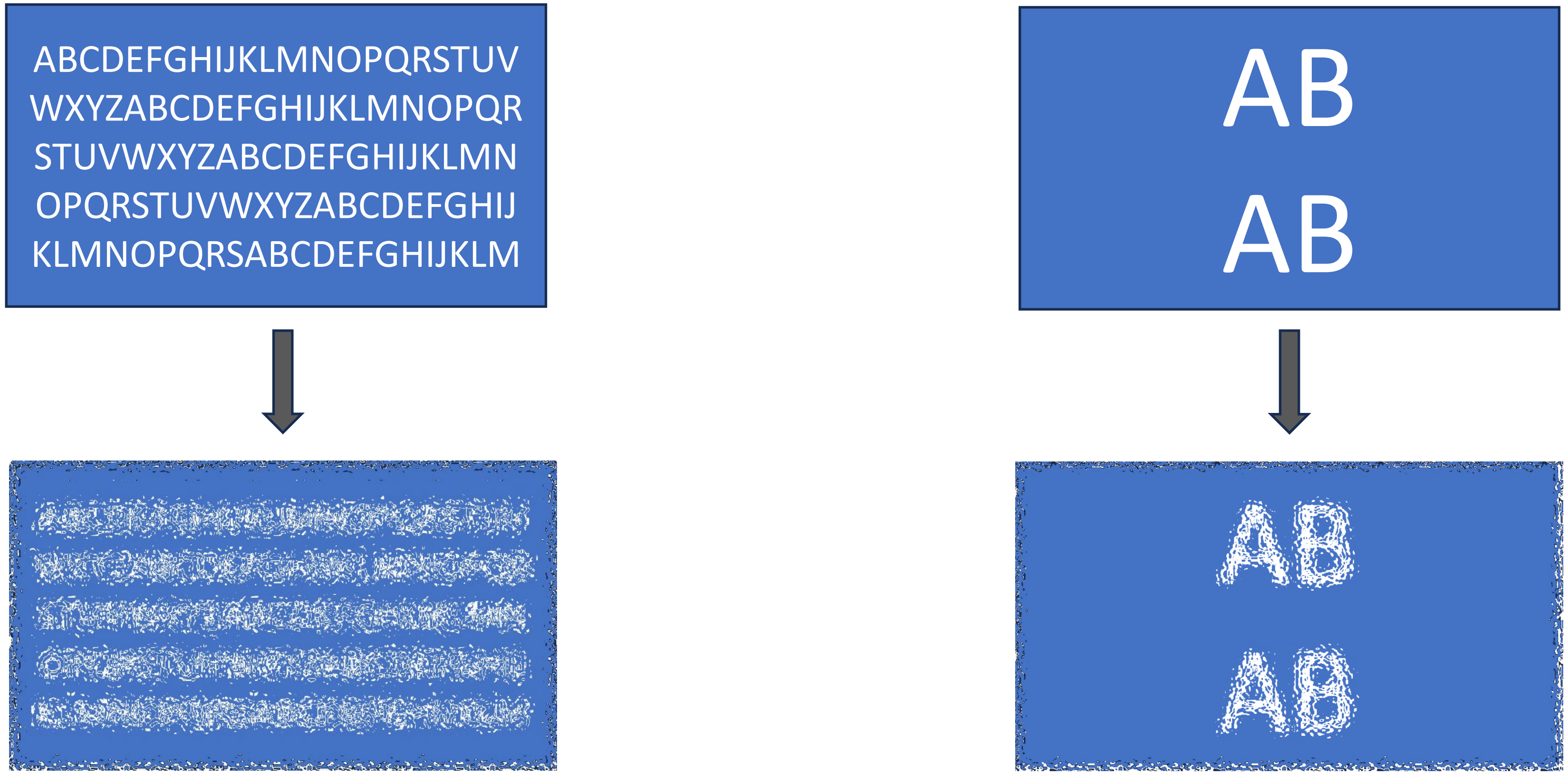
fer packets. The robust packet’s main characteristics are that it can be received by any BCN modem in the network even before channels are optimized. The robust packets contain significant redundancy and are transmitted using lower order modulation. The robust packet type is used mainly to broadcast information to all nodes in the BCN network **310** and to enable communications between them before the network is optimized, or to communicate most important control and timing information. One of the robust packets may be called a beacon that may be sent at anytime, no matter the quality of the link, to provide the basic timing and control information that may be required for robust network operation. The robust

’802 Patent at 13:11–19

’802 Inventive Concept: “Robust” Packets Using Lower Order Modulation

<u>Higher Order Modulation</u>

<u>Lower Order Modulation With Redundancy</u>



Prosecution-Cited Prior Art Did Not Disclose The Beacon Packet Of Claim 3

’802 Patent File History

CRC field. Cafarelli et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon CRC field (paragraph [0053] lines 1-4).

08/03/2010 Rejection at 5

Cafarelli et al.

[0053] g) Beacon frame: In an infrastructure network, an access point periodically sends a Beacon frame that contains a timestamp and configuration information about the access point.

US 2003/0012163 A1, ¶ 53

’802 Inventive Concept: Upconverting Packets Before Transmitting On The Cable Network

’802 Patent Claim

3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:

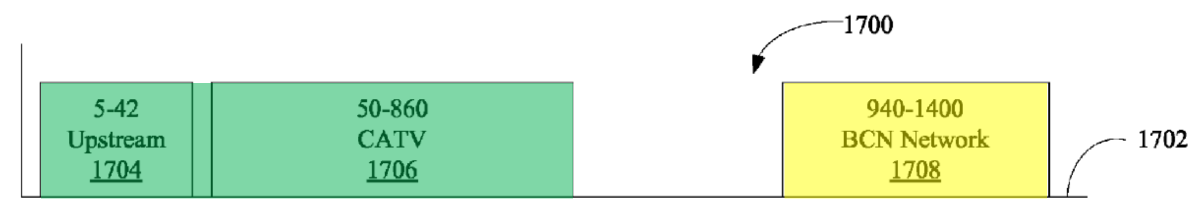
. . .

upconverting the packets with the information for transmission via the broadband cable network at a RF subsystem that is in signal communication with the Modem subsystem;

’802 Patent Specification

One of the key features of the BCN network is its ability to co-exist with other services over the existing coaxial cable.

In FIG. 17, a diagram **1700** of frequency plans is illustrated. In most two-way cable systems **1702**, an upstream frequency band is located in the 5-42 MHz frequency band **1704**. Analog and digital cable television signals and cable modem downstream carriers are found in the 50-860 MHz frequency band **1706** and the BCN network **1708** is located between 940-1400 MHz. In theory, the BCN network can be



’802 Patent at 12:13–14, 24:4–10; Fig. 17

’802 Patent Is Patent-Eligible Under § 101

- *Alice* Step one: claim 3 is not directed to an abstract idea
  - Specific data fields in a Beacon Packet improve coaxial cable networks by enabling node-to-node communication
- *Alice* Step two: claim 3 includes multiple “inventive concepts”
  - Using robust Beacon Packet to provide essential information enables node-to-node communication in a coaxial cable network
  - Upconverting packets before transmitting them on a broadband cable network allows co-existence with other services

The '681 Patent Is Directed To An Improvement In The Operation Of Computer Networks

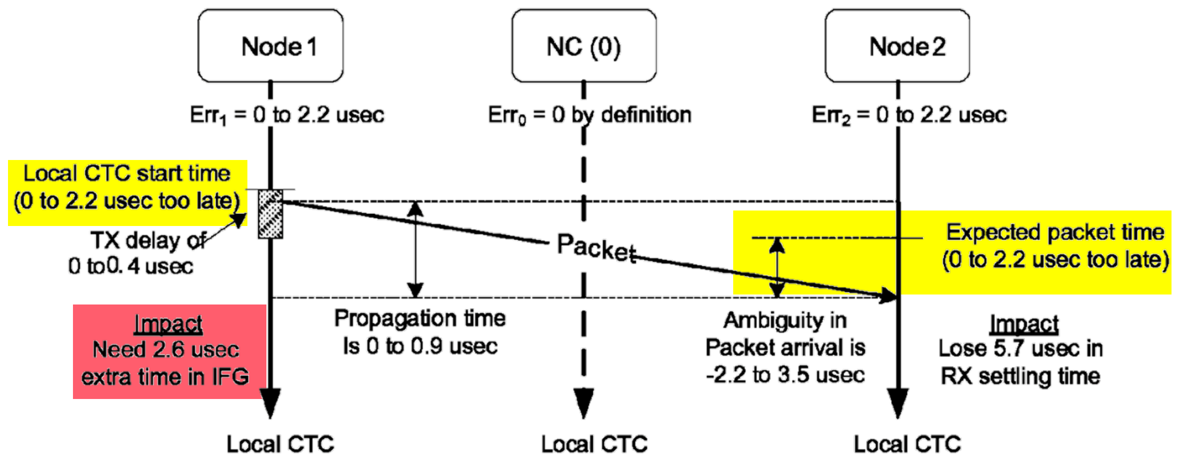
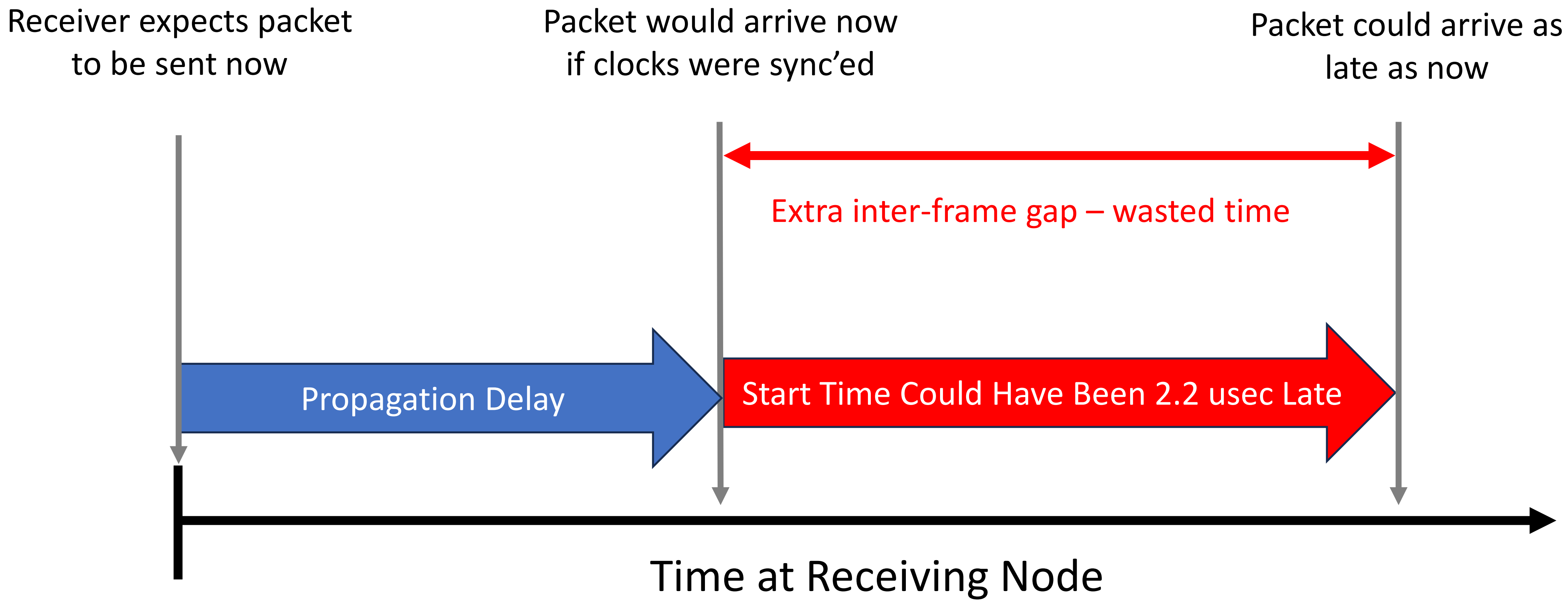


FIG. 3
(Prior Art)

FIG. 3 is a diagram illustrating the ambiguity in packet arrival time between two nodes (Node 1 and Node 2) under the MoCA 1.x standard. Specifically, the diagram illustrates a consequence of the 0 to 2.2 µsec CTC time ambiguity described above. In order to compensate for the CTC time ambiguity, the packet transmission time variability requires an extra 2.6 µsec in inter-frame gap (IFG), which is the amount of time between network packets. In addition, the packet arrival time will have −2.2 to +3.5 µsec of unpredictability.

'681 Patent at FIG. 3, 3:15-24

The '681 Patent Is Directed To An Improvement In The Operation Of Computer Networks



The '681 Patent Is Directed To An Improvement In The Operation Of Computer Networks

BRIEF SUMMARY OF EMBODIMENTS OF THE DISCLOSURE

According to various embodiments of the disclosure, systems, methods and apparatuses are provided for using ranging to improve network efficiency. In particular, various embodiments of the disclosure provide ranging to improve local clock time synchronization. Ranging is a method by which nodes measure and/or estimate the propagation delays to and from other nodes in the network. Depending on the embodiment, ranging can result in reduced inter-frame gap (IFG) by more accurately controlling the expected start and end times for arriving network packets. Ranging thus provides more predictable network packet arrival times that can be used to decrease the IFG without decreasing the "true" IFG.

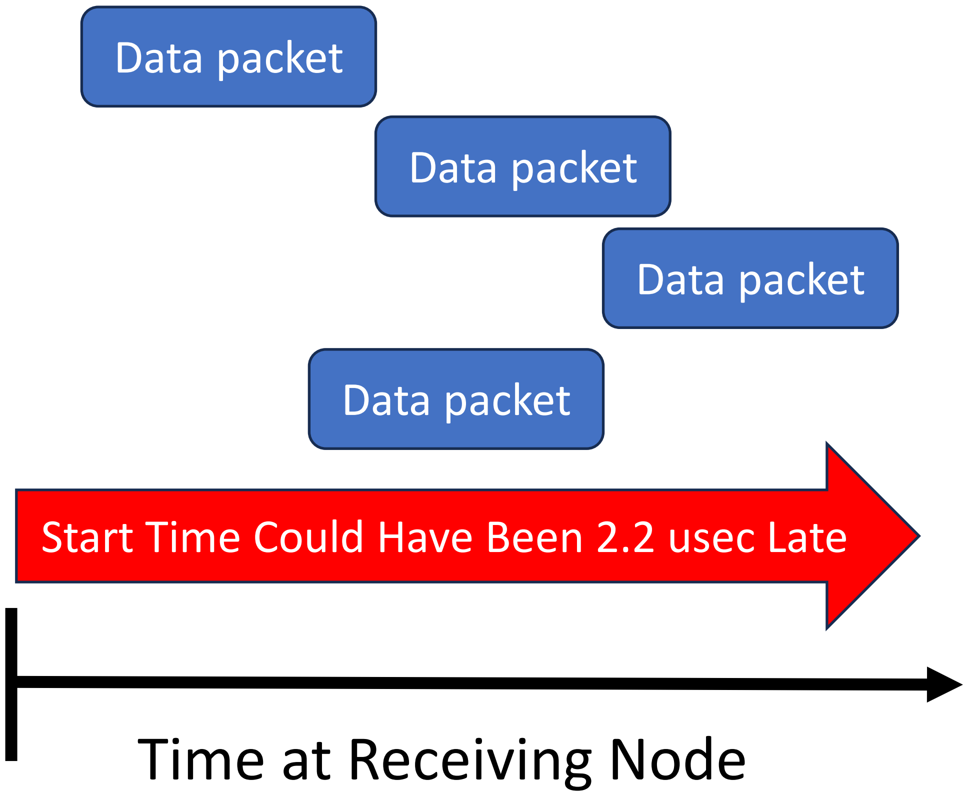
DETAILED DESCRIPTION OF THE EMBODIMENTS OF THE DISCLOSURE

The present disclosure is directed toward systems, methods and apparatuses for using ranging to improve network efficiency. In some embodiments, ranging is utilized to improve local clock time synchronization. In doing so, various embodiments of the disclosure are capable of reducing the inter-frame gap (IFG), increased predictability of packet arrival times, reducing the cyclic prefix length for some frequency division multiple access schemes, such as OFDMA.

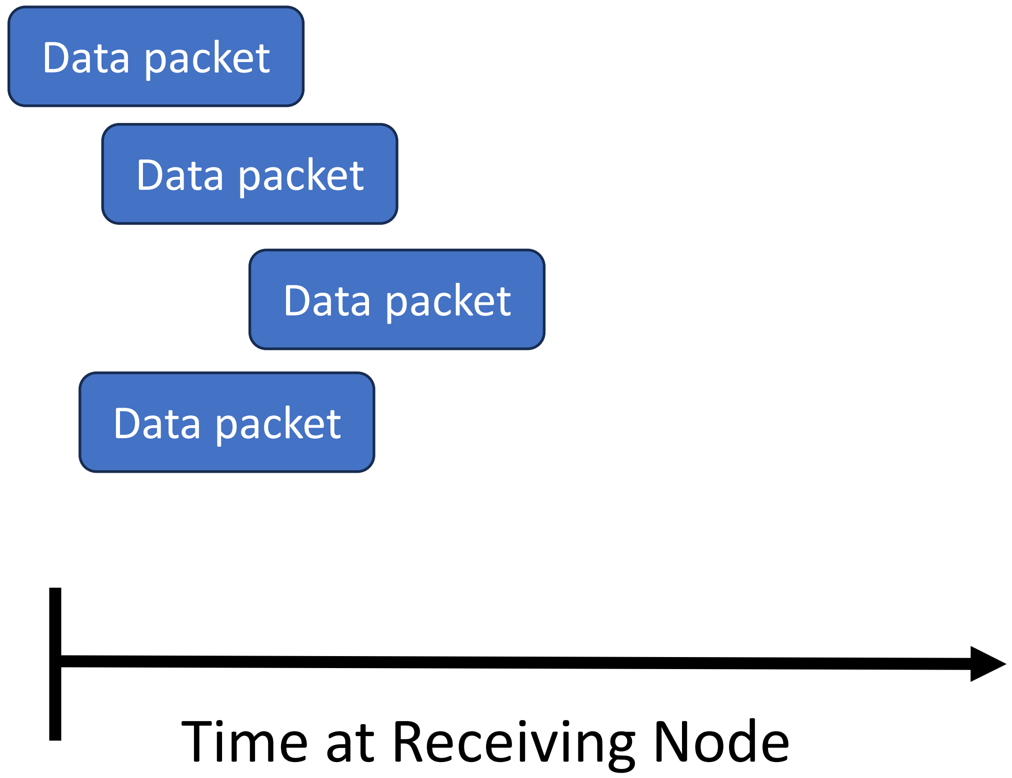
'681 Patent at 3:51-65, 6:22-32

The '681 Patent Improves, And Changes The Operation Of, A Computer Network

Without '681 Patent



With '681 Patent



The '681 Patent's Claims Are Tied To An Improvement In The Operation Of Computer Networks

BRIEF SUMMARY OF EMBODIMENTS OF THE DISCLOSURE

According to various embodiments of the disclosure, systems, methods and apparatuses are provided for using ranging to improve network efficiency. In particular, various embodiments of the disclosure provide ranging to improve local clock time synchronization. Ranging is a method by which nodes measure and/or estimate the propagation delays to and from other nodes in the network. Depending on the embodiment, ranging can result in reduced inter-frame gap (IFG) by more accurately controlling the expected start and end times for arriving network packets. Ranging thus provides more predictable network packet arrival times that can be used to decrease the IFG without decreasing the "true" IFG.

'681 Patent at 6:22-32

1. A method for synchronizing a plurality of nodes on a communication network, comprising:

* * *

performing a ranging method between the first and second nodes based on the local clock time exchanged, wherein the ranging method results in an estimated propagation delay between the first and second node, and wherein the ranging method comprises:

transmitting a second packet from the second node to the first node, wherein the second packet is transmitted from the second node at the scheduled arrival clock time, and wherein the second packet is received by the first node at an actual arrival clock time,

calculating and storing the estimated propagation delay at the first node, wherein calculating the estimated propagation delay is based on the scheduled arrival clock time and the actual arrival time, and

transmitting a third packet from the first node to the second node, wherein the third packet comprises the estimated propagation delay; and

adjusting the local clock time of either the first or second node based on the estimated propagation delay, thereby resulting in a synchronized local clock time between the first and second node.

Uniloc v. LG Confirms That The ‘681 Patent Is Directed To Patent-Eligible Subject Matter

Uniloc v. LG Claim

2. A primary station for use in a communications system comprising at least one secondary station, wherein means are provided

for broadcasting a series of inquiry messages, each in the form of a plurality of predetermined data fields arranged according to a first communications protocol, and

for adding to each inquiry message prior to transmission an additional data field for polling at least one secondary station.

Uniloc v. LG: Reasoning

In accordance with this precedent, we hold the claims at issue are directed to a patent-eligible improvement to computer functionality, namely the reduction of latency experienced by parked secondary stations in communication systems. . . . The additional data field enables a primary station to simultaneously send inquiry messages and poll parked secondary stations. *Id.* at Abstract. The claimed invention therefore eliminates or reduces the delay present in conventional systems where the primary station alternates between polling and sending inquiry messages.

Uniloc USA, Inc. et al v. LG Electronics USA, 957 F.3d 1303, 1305-06, 1307 (Fed Cir. 2020)

The '681 Patent Is Not Merely "Functional" But Claims A Specific Technological Solution

1. A method for synchronizing a plurality of nodes on a communication network, comprising:
exchanging a local clock time between a first node and a second node over the communication network, wherein the exchange comprises:
transmitting a first packet from the first node to the second node, wherein the first packet includes a first packet clock time set to the local clock time of the first node at transmission time, and includes a scheduled arrival clock time, and
setting the local clock time of the second node to the first packet clock time;
performing a ranging method between the first and second nodes based on the local clock time exchanged, wherein the ranging method results in an estimated propagation delay between the first and second node, and wherein the ranging method comprises:

transmitting a second packet from the second node to the first node, wherein the second packet is transmitted from the second node at the scheduled arrival clock time, and wherein the second packet is received by the first node at an actual arrival clock time,
calculating and storing the estimated propagation delay at the first node, wherein calculating the estimated propagation delay is based on the scheduled arrival clock time and the actual arrival time, and
transmitting a third packet from the first node to the second node, wherein the third packet comprises the estimated propagation delay; and
adjusting the local clock time of either the first or second node based on the estimated propagation delay, thereby resulting in a synchronized local clock time between the first and second node.

Because It Claims A Specific Technological Solution, The ‘681 Patent Does Not Raise Preemption Concerns

By its terms, claim 1 cannot and does not preempt:

- ✓ Synchronization methods that do not use a “scheduled arrival time”
- ✓ Synchronization methods that do not calculate a propagation delay or adjust local time based on it
- ✓ Synchronization methods where the propagation delay is calculated other than at the first node
- ✓ Synchronization methods where a propagation delay is not transmitted to the second node

The '681 Patent Does Not Raise Preemption Concerns

DirecTV's Railroad Analogy

For example, the need for clock synchronization between disparate nodes has been known for well over a century. During the railway age of the 1800s the variations in local clock times were a documented issue, resulting in a variety of efforts and techniques to "synchronize" the time between disparate train stations.[5] Station masters relied on charts reflecting the differences in local clock times to create synchronized schedules for train travel. The '681 Patent is so broad as to in fact preempt the use of the claimed synchronization techniques in that context:

Trains, postal, or telegraph systems can be used in "communication network[s]", stations can be nodes, and there is nothing in the claims of the '681 Patent that is a particular technical improvement, or even a particular type of communication network.

Motion at 16, 17

DirecTV's Railroad Analogy Ignores The Specification And Relies On Implausible Constructions

What DirecTV Argues: Network can be "trains, postal, or telegraph systems"

What the '681 Specification Says:

The present disclosure relates to networks, and more particularly, some embodiments relate to using range estimates to improve efficiency in networks, particularly networking over coaxial cable.

For example, communication networks are now commonplace in many home and office environments.

FIG. 1 is a diagram illustrating one example of a home cable network. The example of a home environment illustrated in FIG. 1 also includes examples of equipment and other electronic devices or nodes that might be found in a typical home-networking environment such as the network defined by MoCA 1.0.

'681 Patent at FIG. 1, 1:15-18, 1:30-31, 2:13-19, 5:38-40

FIG. 1 is a diagram illustrating an example implementation of a home cable network in accordance with one example of an environment for the disclosure.

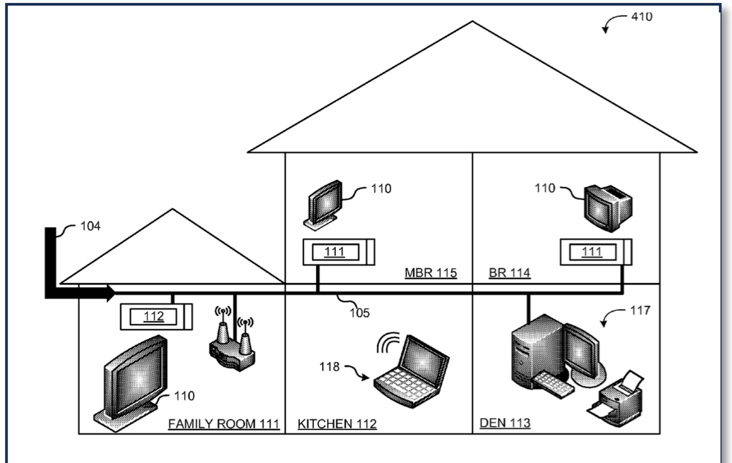


FIG. 1

DirecTV's Railroad Analogy Ignores The Specification And Relies On Implausible Constructions

What DirecTV Argues: Train "stations" can be nodes

What the '681 Specification Says:

A MoCA network includes a plurality of client nodes, such as TVs **110**, set top boxes **111** and computers **117**, **118**. It should be noted that TVs, **110**, set top boxes **111** and computers **117**, **118** are configured with a communication device that allows these devices to operate as a client node on the MoCA network.

The network of FIG. **1** includes set-top boxes **111** and televisions (TVs) **110** found in the master bedroom **115**, the bedroom **114**, and the family room **113**. Also, a typical home network might include computing systems such as a desktop computing system **117** and peripherals as illustrated in the den **113**, and a laptop computer **118** such as that illustrated in the kitchen **112**. Other content devices or network devices might also be provided.

'681 Patent at 1:27-32, 2:19-26

DirecTV's Cited Cases Are Not Analogous

The claims of the '681 Patent fail the first step of the *Alice* inquiry because the focus of the claims and their character as a whole is directed to the abstract concept of synchronizing local clock times. *See SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018); *Implicit, LLC v. Ziff Davis, Inc.*, No. 2:22-cv-09453-AB-AFMx, 2023 WL 4366351, at *3 (C.D. Cal. July 3, 2023) (claims directed to concepts of data synchronization are abstract).

Motion at 15

DirecTV's Cited Cases Are Not Analogous

SAP v. InvestPic Claim

> 1. A method for calculating, analyzing and displaying investment data comprising the steps of:
>
> (a) selecting a sample space, wherein the sample space includes at least one investment data sample;
>
> (b) generating a distribution function using a resampled statistical method and a bias parameter, wherein the bias parameter determines a degree of randomness in a resampling process; and,
>
> (c) generating a plot of the distribution function.

SAP America Inc. v. InvestPic Ltd,
898 F.3d 1161, 1164 (Fed. Cir. 2018)

The *InvestPic* claim is not like the '681 Patent:

- X Purely relates to analysis and display of data
- X Relates to financial and economic activities
- X Does not address a technical problem in computer networking
- X Does not change the operation of a computer network

DirecTV's Cited Cases Are Not Analogous

Implicit v Ziff Davis Claim

1. A method in a computer system for synchronizing a duplicate namespace with an original namespace, the method comprising:

receiving a query specification and a view specification for one or more objects in the namespace, the view specification indicating how objects satisfying the query specification are to be organized;

identifying from the original namespace the objects that match the query specification;

generating a duplicate namespace using the identified objects and the view specification;

associating the query specification and view specification with the duplicate namespace;

modifying one or more objects so that the original namespace and duplicate namespace are not synchronized;

re-identifying from the original those objects that match the query specification; and

modifying one or more objects so that the original namespace and duplicate namespace are synchronized.

The *Implicit* claim is not like the '681 Patent:

- X Not alleged to improve functionality of computer or network
- X No details regarding how claimed synchronization was performed
- X Purported improvements in flexibility not tied to elements of claims

Implicit LLC v. Ziff Davis Inc.,
2023 WL 4366351 at *1 (Fed. Cir. Jul. 3, 2023)

The '681 Patent's Dependent Claims Define The Context Of The Problem Being Solved, Not A Mere "Field Of Use"

Claim 10: Requires MoCA Network

10. The method of claim **1**, wherein the communication network operates in accordance with a Multimedia over Coax Alliance (MoCA) standard.

Specification: Clock-Sync Problem Arises From MoCA

FIG. **3** is a diagram illustrating the ambiguity in packet arrival time between two nodes (Node **1** and Node **2**) under the MoCA 1.x standard. Specifically, the diagram illustrates a consequence of the 0 to 2.2 μsec CTC time ambiguity described above. In order to compensate for the CTC time ambiguity, the packet transmission time variability requires an extra 2.6 μsec in inter-frame gap (IFG), which is the amount of time between network packets.

FIG. **4** is a diagram illustrating the "true" inter-frame gap for a particular node under the MoCA 1.x standard. The true" inter-frame gap indicates the amount of time the node has after processing a first packet to prepare for the next packet.

* * *

Accordingly, there is a relatively large IFG that is required to account of the ambiguities.

'681 Patent at 3:15-22, 3:25-28, 3:18-49